

Appl. No. 10/604,869

Amdt. dated 10/13/2005

Reply to Office action of 07/29/2005

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of the Claims

1. (currently amended): A method for formation evaluation results from a multi-dimensional representation of nuclear magnetic resonance data, the method comprising the steps of:

[[O]]obtaining a set of NMR data for a fluid sample;

[[C]]computing from the set of NMR data a multi-dimensional distribution using a mathematical inversion independent of prior knowledge of fluid sample properties;

[[D]]displaying the multi-dimensional distribution as an at least two-axis graph;

[[I]]identifying at least one fluid peak [[instance]] on the graph, via graph-based analysis, representing a probable existence of a detected fluid; and

[[C]]computing a quantitative formation evaluation value for the at least one fluid peak [[instance]] based on the multi-dimensional distribution associated with the at least one fluid peak [[instance]].

2.-4. (canceled)

5. (original): The method of claim 1, wherein the mathematical inversion is based on a maximum entropy process.

Appl. No. 10/604,869  
Amdt. dated 10/13/2005  
Reply to Office action of 07/29/2005

6. (original): The method of claim 1, wherein the multi-dimensional distribution is displayed along a fluid diffusion axis and a T2 relaxation axis.

7. (original): The method of claim 5, wherein the graph includes an overlay with ideal diffusion and T2 relaxation values.

8.-31. (canceled)